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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/826,138

Applicant(s)

WYBENGA ET AL.

Examiner

ROBERT C. SCHEIBEL

Art Unit

2619

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 February 2008.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-6, 11-16 and 21-23 is/are rejected.
7) ☒ Claim(s) 7-10 and 17-20 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB-08)
Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

- Examiner acknowledges receipt of Applicant's Amendment filed 2/4/2008.
- Claims 1, 3, 4, 5, 11, 13, 14, 15, 21, and 22 are currently amended.
- Claims 1-23 are currently pending.

Response to Arguments

1. Applicant's arguments, see section I on page 10, filed 2/4/2008, with respect to the objections to claims 1, 11, and 21 have been fully considered and are persuasive. The objections to claims 1, 11, and 21 have been withdrawn.
2. Applicant's arguments, see section II on pages 10-11, filed 2/4/2008, with respect to the rejection of claims 3-10, 13-20, and 22 under 35 U.S.C. 112, second paragraph, have been fully considered and are persuasive. The rejection claims 3-10, 13-20, and 22 under 35 U.S.C. 112, second paragraph, has been withdrawn.
3. Applicant's arguments, see section III on pages 11-15, filed 2/4/2008, with respect to the rejection of claims 1-6, 11-16, and 21-23 have been fully considered but they are not persuasive.

In the first paragraph of this section, Applicant restates the rejection and asserts that the rejection is traversed. In the second paragraph, Applicant reviews the requirements for anticipation. In the next paragraph, Applicant specifies the limitations that Applicant feels are not disclosed by Irwin. Then, Applicant quotes various passages of Irwin and argues that the program counter of Irwin does not disclose the limitations of the configuration register as it is a pointer to instructions that make up the forwarding program.

Examiner respectfully disagrees. The program counter that Applicant refers to is different than the program counter used in the rejection. The program counter discussed in the passages cited by Applicant is assigned to each packet to track the progress of the procedures within the main program relative to that packet. However, every processor uses a program counter (a hardware register) to indicate the location in memory of the instruction being executed. When a procedure call is forwarded to a processor 110, it is executed by setting the program counter register to point to the location of that procedure in memory. As indicated in the previous office action, it is these program counters that read on the limitation of the first and second configuration registers. (For example, on page 4 of the previous office action, Examiner stated “the procedure call forwarded to processor 110 (see lines 1-17 of column 8) is ultimately translated to a program counter in the processor 110 to execute the procedure call; this value in the register determines which procedure is run by the first network processor”). This register clearly determines which function(s) (“a first group of control and management functions”) are going to be executed by the processor at that time.

In the first paragraph on page 13, Applicant argues that the program counter is assigned to a packet and is not associated with a processor. Examiner respectfully disagrees. As explained above, the rejection refers to the program counter register of the processor which is certainly “of the first network processor”.

In the next paragraph, Applicant argues that a single program counter is used to disclose both the first and second registers. Examiner respectfully disagrees. As explained above, it is the program counter register of each of the first and second network processors 110 of Irwin that are relied upon in the rejection.

Applicant cites similar arguments for claims 11 and 21 as well as the dependent claims. For reasons stated above, Examiner respectfully disagrees.

In short, while there are clearly differences between the invention as defined in the specification and the Irwin reference, the independent claims are broad enough to be disclosed by Irwin. Examiner recommends that Applicant amend the claim language of the independent claims to distinguish them from Irwin.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims **1-6, 11-16, and 21-23** are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 6,393,026 to Irwin.

Regarding claims **1 and 11**, Irwin discloses a router (the router of figure 1) for interconnecting external devices coupled to said router, said router comprising: a switch fabric (element 14 of figure 1); and a plurality of routing nodes (the combination of elements 12 and 18) coupled to said switch fabric, wherein each of said plurality of routing nodes comprises: i) packet processing circuitry (the network interfaces 12 of Figure 1) configured to exchange data packets with external devices and to exchange data packets with other ones of said plurality of routing nodes via said switch fabric (these interfaces transmit/receive data to/from external devices and pass them to other routing nodes (via the forwarding engines) through the switching

fabric) and ii) control processing circuitry configured to perform control and management functions (the forwarding engines 18; there are various embodiments of this shown in Figures 2-5, 7, and 10+; as indicated in Figure 10, at least some of the functions performed by the processors that comprise the forwarding engine are control/management functions (metric, congestion, rmon, etc.)), wherein said control processing circuitry comprises: a first network processor configured to perform a first group of control and management functions (one of processors 110 of Figure 7; or equivalently, one of processors 172 of Figure 10; as indicated in Figure 10, at least some of the functions performed by the processors that comprise the forwarding engine are control/management functions (metric, congestion, rmon, etc.)), wherein the control and management functions in the first group are determined based on contents of a first configuration register of the first network processor (the procedure call forwarded to processor 110 (see lines 1-17 of column 8) is ultimately translated to a program counter register in the processor 110 to execute the procedure call (all processors have a program counter to track the location of the program instructions in memory); this value in the program counter register determines which procedure is run by the first network processor); and a second network processor configured to perform a second group of control and management functions (another of processors 110 of Figure 7; or equivalently, another of processors 172 of Figure 10; as indicated in Figure 10, at least some of the functions performed by the processors that comprise the forwarding engine are control/management functions (metric, congestion, rmon, etc.)), wherein the control and management functions in the second group are determined based on contents of a second configuration register of the second network processor (the procedure call forwarded to processor 110 (see lines 1-17 of column 8) is ultimately translated to a program

counter register in the processor 110 to execute the procedure call (all processors have a program counter to track the location of the program instructions in memory); this value in the program counter register determines which procedure is run by the first network processor).

Regarding claim 21, Irwin discloses a method of distributing control and management functions comprising the steps of: performing a first group of control and management functions in a first network processor (one of processors 110 of Figure 7; or equivalently, one of processors 172 of Figure 10; as indicated in Figure 10, at least some of the functions performed by the processors that comprise the forwarding engine are control/management functions (metric, congestion, rmon, etc.)), wherein the control and management functions in the first group are determined by the contents of a first configuration register of the first network processor (the procedure call forwarded to processor 110 (see lines 1-17 of column 8) is ultimately translated to a program counter in the processor 110 to execute the procedure call; this value in the register determines which procedure is run by the first network processor); performing a second group of control and management functions in a second network processor (one of processors 110 of Figure 7; or equivalently, one of processors 172 of Figure 10; as indicated in Figure 10, at least some of the functions performed by the processors that comprise the forwarding engine are control/management functions (metric, congestion, rmon, etc.)), wherein the control and management functions in the second group are determined by the contents of a second configuration register of the second network processor (the procedure call forwarded to processor 110 (see lines 1-17 of column 8) is ultimately translated to a program counter in the processor 110 to execute the procedure call; this value in the register determines which procedure is run by the first network processor); and re-allocating control and management

functions between the first network processor and the second network processor according to a first level of activity of control and management functions in the first network processor relative to a second level of activity of control and management functions in the second network processor (see lines 56-60 of column 6 and lines 3-6 of column 8 which indicate that the processors are selected based on the relative load currently on each processor).

Regarding claims **2 and 12**, Irwin discloses the limitation that said control and management functions are dynamically allocated between said first network processor and said second network processor according to a first level of activity of control and management functions in said first network processor relative to a second level of activity of control and management functions in said second network processor (see lines 56-60 of column 6 and lines 3-6 of column 8 which indicate that the processors are selected based on the relative load currently on each processor).

Regarding claims **3, 13, and 22**, Irwin discloses the limitations that said first network processor is controlled by first control software code and said second network processor is controlled by second control software code identical to said first control software code (see lines 25-29 of column 4 and lines 61-64 of column 7 which indicate that the same procedures are loaded onto each processor 110).

Regarding claims **4 and 14**, Irwin discloses the limitation that said first network processor determines the first group of control and management functions allocated to said first network processor by examining the first configuration register (the procedure is forwarded to the selected computing node 110 (see lines 1-17 of column 8, for example); the processor then loads the corresponding program counter into its program counter register to indicate the

procedure to be run by the processor; a register such as a program counter register is inherent to all processors.)

Regarding claims **5 and 15**, Irwin discloses the limitation that said second network processor determines the second group of control and management functions allocated to said second network processor by examining the second configuration register (the procedure is forwarded to the selected computing node 110 (see lines 1-17 of column 8, for example); the processor then loads the corresponding program counter into its program counter register to indicate the procedure to be run by the processor; a register such as a program counter register is inherent to all processors).

Regarding claims **6, 16, and 23**, Irwin discloses the limitation that a first one of said control and management functions may be re-allocated from said first group of control and management functions to said second group of control and management functions by modifying the contents of said first configuration register and said second configuration register (as indicated above, the program counter register is modified to point to the selected procedure which indicates that the selected procedure should be run.)

Allowable Subject Matter

3. Claim **7-10 and 17-20** would be allowable if rewritten to overcome the rejection under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- US 20030231625 A1 to Calvignac et al discloses selective header field dispatch in a network processing system.

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT C. SCHEIBEL whose telephone number is (571)272-3169. The examiner can normally be reached on Mon-Fri from 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wing F. Chan can be reached on 571-272-7493. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Wing F. Chan/
Supervisory Patent Examiner, Art Unit 2619
4/25/08

Robert C. Scheibel
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